Before the

Federal Communications Commission

Washington, D.C. 20554

In the Matter of	)	
Comment Sought on Health	)	GN Docket Nos. 09-47, 09-51,
Care Delivery Elements of a	)	09-137 WT Docket No. 02-60
National Broadband Plan	)	
	)	
NBP Public Notice # 17	)	

Comments

The State of New York ("the State") hereby submits comments in response to the Federal Communication Commission's ("Commission") National Broadband Plan public notice #17 dated November 12, 2009.[1]

General Response

In order for broadband infrastructure and services to have a positive impact with respect to advancing health care delivery, the following three objectives must be advanced:

1. Making critical health information available at the point of care for the patients in a secure fashion;

2. Making healthcare providers accessible to broader populations, especially to the unserved and underserved populations in rural areas; and

3. Making healthcare information readily accessible and available in citizens' homes.

As noted in the Universal Broadband Strategy for the State of New York, 4.1 Million of the 7 million residential household (58.3%) in New York State currently subscribe to high-speed Internet service.

---

[1] CIO/OFT thanks and acknowledges the following entities for their efforts in preparing the State's comments: NYS Dept. of Health; NYS Dept. of Labor; NYS Office of Children and Family Services; NYS Office of Temporary and Disability Assistance; NYS Office for the Aging; and NYS Office of Mental Retardation and Development Disabilities.

Broadband is available to an additional 40% of households, for a total coverage rate of 98.3% of New Yorkers. However, 40% of those who have physical access to broadband are not subscribers. Additionally, two-thirds of those living within New York City do not have *affordable* high-speed Internet access.

While electronic health records (EHRs), remote patient monitoring, and real-time video consultations (collectively known as telemedicine applications) are among those applications that can be greatly advanced by using broadband technology, the widespread use of these health IT applications in New York State hinges on our ability to close the digital divide in underserved urban and rural communities. We need to introduce the broadband enabled health IT applications to all households at or below the poverty level by providing access to, and training and support for, such applications.

As stated in the Universal Broadband Strategy for the State of New York, we need to build stronger public/private partnerships. Neither the private sector nor the public sector alone can promote the widespread use of health IT applications. The public sector plays a pivotal role in promoting the use of broadband enabled health IT applications in underserved urban and rural communities, as well as in low-income households, in New York State. Adequate broadband investment for public sector health IT infrastructure is needed to increase the use of New York State e-Government services online by leveraging online health IT applications. Such investment for public sector health IT broadband infrastructure should be made a high priority.

Response to 1. IT Infrastructure to Support Healthcare Delivery

The list of the health care delivery settings outlined in the Comment Sought on Health Care Delivery Elements of National Broadband Plan ("NBP Public Notice #17") do not explicitly cover the entire spectrum of health care delivery settings. Additional specialty healthcare delivery settings such as mental health, substance abuse, and health care for people with developmental disabilities should be explicitly included in the discussion. These specialty settings often represent a different structure of care; involve a greater diversity of health care professionals; and benefit directly from the use of broadband

technology. In addition, a great deal of care for mental health, substance abuse, and development disability is delivered through non-health care sectors such as education (especially for children), criminal justice, and social services. For example, health care for children is delivered in the Juvenile Justice program by New York State Office of Children and Family Services.

The investment in broadband infrastructure is needed to enable health IT applications in the mental health, substance abuse, developmental disability, and other non-traditional health care sectors. We suggest the following expanded list of delivery settings:

a. Hospitals;

b. Community health clinics and outpatient centers;

c. Physician offices;

d. Long-term care facilities;

e. Home;

f. Emergency Medical Responders;

g. Indian Health Service, Dept. of Health and Human Services, and other health service providers on tribal lands;

h. Healthcare Facilities for Mental Health and Substance Abuse;

i. Treatment Facilities for Developmental Disabilities;

j. Health Care Facilities for People under Confinement; and

k. Health Care Facilities in non-health care sectors.

All commonly available means of achieving broadband Internet connectivity such as digital subscriber line (DSL), cable modem, fiber-to-the-premise, and wireless can support the above expanded delivery settings. In New York State, digital subscriber line (DSL) service is available to 78% of the State's residential households, while high-speed cable modem broadband Internet is available to about 96% of residential households in New York State. Cable modem broadband service accounts for 2.9 million of 5.6 million total residential and commercial broadband customers in the State.

A detailed analysis of how different methods of Broadband Internet connectivity are used across each delivery setting in New York State requires more rigorous data collection and analysis. Funding should be made available to study the methodology and criteria for determination of sufficient connectivity levels in terms of peak and average transmission rates, guaranteed minimum bandwidth, latency, jitter, reliability, etc. Collection of data to determine usage, sufficient connectivity levels, and underlying IT infrastructure should be formally conducted and reported in order to obtain a more rigorous understanding of how different methods of Broadband Internet connectivity are used across each delivery setting in New York State. Reporting of such data by publicly funded health IT projects should be mandated.

The median U.S. download speed is 1.97 megabits per second (mbps). For individuals in their homes, this speed is sufficient to accomplish the exchange of textual data and information about healthcare. It is not sufficient for advanced use for image intensive and video sessions. Many types of broadband connections to individual households are asymmetrical in terms of download and upload speed. Upload speed is usually lower than the download speed, which limits the effective home use of health IT applications such as remote patient monitoring and real-time video consultations.

Response to 2. Connectivity Requirements to Support Health IT Applications

For the health IT applications listed in NBP Public Notice #17, the network requirements are indeed dependent on the content. For example, unlike voice, video has a very high data packet rate. 37% of time, the packet for video contains 1025 to 1518 bytes, the streaming of which uses about 600 kbps, which typically exceeds the upload speed for broadband connectivity from individual households. On the other hand, textual health care data download and upload can be achieved at the much lower bandwidth.

In order to support health IT applications, the broadband communication services for data security is critical. According to the regulations, the sensitive, protected health information (PHI) should be encrypted across the public Internet. The access and interaction with PHI should be constantly

authenticated, authorized, logged, and audited. The professional and regulatory compliance with security and privacy requirements is a pre-requisite for widespread usage of the health IT applications. For rural areas, where the healthcare information is most likely transmitted over public Internet, the security and privacy requirements, in addition to the reliability and performance requirements, represent higher barriers for the adoption of health IT applications. Wireless broadband access is needed for home-based care by mobile health care professionals. The security and privacy requirements for wireless data transmission is just as stringent as that for wired network, albeit requires different technical solutions.

Enterprise health IT applications, such as electronic health records (EHRs), are increasingly hosted by Application Service Providers (ASPs). The broadband connection between the ASPs and hospitals is a secure private connection which usually requires much higher bandwidth than the average 1.97 mbps bandwidth to household. For example, a typical hospital in New York State maintains a bandwidth of 45 mbps or above in order for the ASP hosted EHRs to work.

Software as a Service (SaaS) and Cloud Computing are still in their infancy in terms of delivering health IT applications. The primary challenge is making SaaS and Cloud Computing compliant with security and privacy regulations, such as those enacted by Health Insurance Portability and Accountability Act (HIPAA). For example, the premise of Cloud Computing separates the users from the technology infrastructure, while much of the solution for security and privacy compliance lies within the technology infrastructure.

The current 3rd generation of commercial wireless networks (3G) can achieve a data rate of 2 mbps for stationary or walking users and 348 kilo-bit per second (kbps) in a moving vehicle. The 3G broadband wireless connection can support health IT applications that are not image-intensive or video-intensive. Many home monitoring data transfers are not image based so they can be delivered by the 3G wireless networks. However, in rural areas, the 3G wireless networks can become spotty as the

wireless infrastructure is affected by the terrains and geographic span. The wireless bandwidth thus becomes less consistent for health IT applications.

The widespread adoption of health IT applications over broadband requires collaboration of all stakeholders in the healthcare industry. An individual stakeholder simply cannot deliver the commonly needed communication and application architecture. As a private-public consortium, New York eHealth Collaborative (NYeC) is New York State's designated entity to manage the State-wide collaboration process (SCP) for such collaboration. NYeC has led the development of the State Health Information Network – New York (SHIN-NY), which provides business standards and protocols for the communication and application architecture. In alignment with SHIN-NY, New York State agencies led the design of a State-wide telehealth network and government health architecture (GHA) which focuses on closing the digital divide and providing a communication and application infrastructure for broadband-enabled health IT applications for underserved and unserved populations. New York State Telehealth Network and GHA also aim to achieve real time bidirectional communication among providers for public health purposes. If realized, New York State Telehealth Network and GHA can greatly increase the adoption of both broadband and health IT applications.

Response to 3. Health IT Value Capture & Use Cases

It is widely recognized that insufficient information at point of care results in serious patient safety concerns, defensive medicine, and rising healthcare costs. An Institute of Medicine (IOM) study has shown that about 98,000 Americans lose their lives yearly due to preventable medical errors. Lacking critical patient health information contributes to such medical errors.

Consumer healthcare information—especially that found in medical records—is dispersed among multiple healthcare practices in different geographical locations. This information is often not available to healthcare providers at the point of care, resulting in redundant testing and defensive medicine and, in some extreme cases, clinicians' inability to treat patients in a timely manner. Advanced broadband infrastructure and services can help link and merge dispersed healthcare patient data, and enable point

of care critical decision making by caregiver. The broadband infrastructure and services, therefore, will increase the use of electronic medical records and improve access to medical records.

In New York State, the medically unserved and underserved population overlaps with the areas unserved and underserved by broadband, such as the rural North Country, Western New York, and East Central New York. In these areas, governmental health care providers make up the "safety-net" for healthcare services. The majority of New York State's government-run health care is provided by facilities operated by the health and human service agencies. The health facilities ran by these agencies are dispersed throughout large geographic areas of the State and largely serve individuals with low income, serious mental illness and substance abuse conditions, and/or with a variety of disabilities. Jointly, these health facilities provide health care services to approximately 2 million vulnerable New Yorkers who often do not have broadband access and are denied access to private healthcare systems.

The information systems of these health and human services agencies which run these health care facilities are currently not integrated, resulting in disparate health records for our vulnerable population. The New York State Government Health Architecture (GHA) aims to design, develop, and implement a broadband infrastructure to connect and integrate agencies' clinical systems. It will aggregate disconnected information from multiple agencies and create accurate personal health records for the approximately 2 million vulnerable New Yorkers. It will promote safe and effective care through the secure delivery of the integrated personal health records to citizens' homes and their caretakers' offices in the rural areas via public Internet. The secure communication mechanisms via broadband infrastructure will be vital in helping patients stay connected to their doctors and other healthcare providers regardless of their locations.

It is widely recognized that insufficient capacity for clinical care exists at a national level to mitigate the effects of disasters when a large number of patients require specialty medical care, such as burn or pediatric patients. There is also a shortage of child and adolescent psychiatrists needed to treat children with behavioral health needs. This problem is particularly serious in rural New York, which has

too few healthcare facilities and practitioners in general. This shortage disproportionately affects rural and underserved communities that often lack access to evidenced-based treatments.

The use of broadband infrastructure and services can significantly increase the accessibility of behavioral health services for underserved youth and adults. Given that psychiatry primarily utilizes conversation and observational skills, telepsychiatry offers a reasonable alternative to an in-person visit. A recent review shows comparable patient satisfaction for telepsychiatry and in-person visits, and suggests that telepsychiatry consultations can approximate in-person assessments. Development of an effective telemedicine infrastructure provided over a universally accessible broadband network could increase access, quality, efficiency and effectiveness of health care to all patients independent of location.

In addition, a disaster might cripple the ability of patients to access necessary specialty care. During 9/11, hospitals were able to discharge patients to free up beds rapidly. This, however, may not be the case when critically ill patients arrive at a hospital in large numbers or over an extended period. Previous gap analyses and needs assessments have confirmed that there is currently not a well-developed mechanism for handling a catastrophic disaster involving specialized medical care in rural areas. There are 51 burn beds in upstate New York, for example, with 25 at the University of Rochester's Strong Regional Burn Center and 10 at the Erie County Medical Center Burn Unit. In the event of disaster, the need for emergency care, especially to address burn injuries, could easily overwhelm healthcare facilities in the area. These facilities would benefit enormously from the availability of remote support via telemedicine from other healthcare facilities, including burn centers. The expansion and improvement of broadband infrastructure to underserved populations, therefore, provides an opportunity to more effectively meet the medical needs of vulnerable populations requiring special clinical care arising from natural or manmade disasters.

The benefit of using health IT applications enabled by the New York State Telehealth Network and Government Health Architecture will deepen the broadband penetration to those 40% household,

both rural and urban, who do not currently subscribe to broadband in New York State. These projects will increase the overall digital literacy for New Yorkers and improve the competency of using health IT applications for health care work force in New York State.

Response to 4. Health IT Use Drivers & Barriers

Affordability, availability, security, and privacy are the primary barriers for both utilization of internet connectivity and adoption of health IT applications. For example, Electronic Medical Records (EMRs) applications for large hospitals usually require tens of millions of dollars of investment. The broadband connection required to deliver these applications cost tens of thousands of dollars per month to run. Smaller health care practices do not have the sophisticated technical expertise to install, configure, and support the application and broadband connection.

Connectivity is a barrier for the following health IT applications:

1.   Electronic health record;

2.   Real time video for telehealth consultations and diagnoses;

3.   Remote patient monitoring systems; and

4.   Mobile and other portable remote monitoring systems.

This is particularly true in the absence of broadband connectivity with bandwidth above 10 mbps, which is 5 times faster than the current median speed for broadband in the U.S. For example the wide spread use of real time video for telehealth consultation is simply intermittent and unreliable in the absence of broadband connectivity with bandwidth above 10 mbps

With respect to policy and fiscal issues, the security and privacy policy framework for these health IT applications are not mature. Even though NYeC has made great strides towards the policy development for EHRs, the policy needed for telehealth, remote patient monitoring, and mobile monitoring systems are not sufficient yet. Security standards and related policy and technical requirements pose a significant cost and burden to providers and could have a disproportionate impact on those in underserved areas. Broadband technology should spur development of innovative solutions

that can reduce cost and ease the burden for providers to comply with security standards and technical requirements.

Response to 5. Data Security in Health IT

The most fundamental challenge to the security of personal health information (PHI) in Health IT applications is the full compliance with the legal requirements related to the privacy and confidentiality protections afforded PHI under federal and state laws. Absent this compliance, the Health IT applications cannot adequately incorporate the protocols to protect PHI from illegal breach and disclosures. Consequently, the legal protections afforded all Americans are jeopardized by the lack of specific guidance from the federal government as to the protections that are to be incorporated in Health IT applications.

Although HIPAA is generally viewed as the regulation which delineates the federal legal requirements related to privacy of PHI, several other federal regulations afford more stringent requirements and protections where disclosure involves specific types of sensitive, personally identifying health information. Therefore, Health IT applications or EHRs which incorporate only the privacy standards specified in HIPAA lack the necessary operating protocols to meet the specific legal protections afforded by these more stringent federal or state protections.

For example, under 42 CFR Part 2, the federal confidentiality regulations, additional protections are imposed on the disclosure of information which could reasonable identify an individual as having been diagnosed as requiring, applied for, received, or referred for, alcohol or substance abuse prevention or treatment services. 42 CFR §2.12(a).

Similarly, genetic information has also been classified as PHI that can only be disclosed pursuant to proper authorization. See §1180 of Part C of title XI of the Social Security Act, added pursuant to the Genetic Information Nondiscrimination Act of 2008. If true portability of EHRs is to be achieved, Health IT applications must incorporate protocols which permit the transmission of sensitive PHI in conformance with all of these applicable laws.

At the communication infrastructure level, broadband deployment will have to meet these security challenges by providing measures which will enforce the state and federal laws. Such measures will place additional network demands. For example, User identities need to be verified and authenticated in every session using these health IT applications. User access to data and health IT applications needs to be authorized. User activities will have to be logged, transmitted, stored, and reviewed across the network.

If broadband communication and application infrastructure, such as New York State Government Health Architecture (GHA), is realized, the ability for millions of New Yorkers to obtain their medical information and Personal Health Records (PHRs) will be greatly simplified. For example, GHA will offer two million New Yorkers who currently are disadvantaged in accessing health IT applications the ability to access and control their health information and connect with their providers. This capability is delivered via e-Government services.

Response to 6. Universal Service Rural Health Care Support Mechanism and Rural Health Care Pilot Program

Healthcare communities in New York State are active participants in the federally funded rural health care support mechanism and pilot programs. These programs allow our rural communities to purchase faster connections that are otherwise unaffordable. However, it has been observed that the speed of implementation for these pilot programs is too slow at the present time. Faster implementation and a simplified process will help the healthcare communities funded by these pilot programs to realize the stated objective quicker.

The Commission could leverage the rural health care support mechanism in coordination with the recent Department of Agriculture's Rural Utilities Service (RUS) Broadband Initiative Program (BIP) and the Department of Commerce's National Telecommunications Information Administration (NTIA) Broadband Technology Opportunities Program (BTOP) to advance the telehealth and telemedicine initiatives, such as the New York State Telehealth Network.

The populations unserved and underserved by broadband are not necessarily rural. For example, two-thirds of those living in New York City do not have affordable high-speed Internet access. Therefore, the Commission should replace the current discounts available to rural health care providers with an across-the-board discount on connectivity for all health care providers.

Respectfully submitted,

Dr. Melodie Mayberry-Stewart
Chair of the New York State Broadband
Development and Deployment Council
New York State Chief information Officer/
Office for Technology
Empire State Plaza P.O. Box 2062
Albany, NY 12220

December 4, 2009